**AERO** DESIGN LTD.
2013 – 39 Avenue N.E., Calgary, Alberta, T2E 6R7

Tel: 403-250-8027
Fax: 403-250-8333
info@aerodesign.ca

1 November, 2007

Transport Canada
Aircraft Certification Division
11th Floor, Canada Place
9700 Jasper Avenue
Edmonton, Alberta
T5J 4E6

Attn: Jack Staal

Your File # : SH00-48
Our File # : Various

Re: Cargo Basket Approval Revisions

Jack,

Please find attached the following documents related to this project:

| | | |
|---|---|---|
| Supplemental Type Certificate (draft) | SH00-48 | Issue 6 |
| (High Quick Release Basket) | | |
| Document Control List | DCL766-1 | Revision 0 |
| Document Control List | DCL766-2 | Revision 0 |
| AE 100 Form | AE766-1 | Revision 0 |
| AE 100 Form | AE766-2 | Revision 0 |
| Compliance Program | CP766 | Revision 0 |
| Modification Approval Applicaton Form | MOD766 | Revision 0 |
| Engineering Report | ER766.01 | Revision 0 |
| Test Plan | TP766.02 | Revision 0 |
| Instructions for Continued Airworthiness | ICA766.90 | Revision 0 |
| MSI 53 Review | | |
| Flight Manual Supplement (407) | FMS766.91 | Revision 0 |
| Flight Manual Supplement (206L) | FMS766.92 | Revision 0 |
| Cargo Basket Installation | 76601 | Revision 0 |
| Cargo Basket Assembly | 76610 | Revision 0 |
| Cargo Basket Body | 76611 | Revision 0 |
| Basket Components - End Hoop Assembly | 76621 | Revision 0 |
| Basket Comp. - Attach Hoop Assembly | 76622 | Revision 0 |
| Basket Components - Hoop | 76623 | Revision 0 |
| Basket Components - Placard | 76625 | Revision 0 |
| Support Beams | 76630 | Revision 0 |
| Handle Assembly | 36255 | Revision 1 |
| Handle Bar Assembly | 36261 | Revision 3 |
| Handle Bracket Assembly | 36262 | Revision 1 |
| Handle Lever | 36271 | Revision 1 |
| Basket Bracket | 36272 | Revision 1 |
| Lid Bracket | 36273 | Revision 1 |
| Bushing | 36274 | Revision 1 |
| Bushing | 36275 | Revision 2 |

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| | | |
|---|---|---|
| (407 Attachment Provisions) | | |
| Document Control List | DCL700 | Revision 1 |
| AE100 Form | AE700 | Revision 1 |
| Block Fabrication | 60620 | Revision 1 |
| | | |
| (Low Fixed Basket) | | |
| Document Control List | DCL492 | Revision 6 |
| Document Control List | DCL492-1 | Revision 1 |
| AE100 Form | AE492 | Revision 2 |
| Cargo Basket Installation (206L) | 49201 | Revision 3 |
| Support Beams (Pocketed Aluminum) | 49221 | Revision 3 |
| Support Beams (Steel) | 49222 | Revision 2 |
| Engineering Report - Pocketed Beams | ER492.04 | Revision 1 |
| Instructions for Continued Airworthiness | ICA492.90 | Revision 1 |
| Flight Manual Supplement | FMS492.01 | Revision 2 |
| Document Control List | DCL606 | Revision 3 |
| AE100 Form | AE606 | Revision 2 |
| Cargo Basket Installation (407) | 60601 | Revision 2 |
| Flight Manual Supplement | FMS606.01 | Revision 2 |
| | | |
| (Quick Release Basket Installation) | | |
| Document Control List | DCL701 | Revision 1 |
| AE100 Form | AE701 | Revision 1 |
| Cargo Basket Installation (407) | 70101 | Revision 2 |
| Flight Manual Supplement | FMS701.90 | Revision 1 |
| Document Control List | DCL702 | Revision 1 |
| AE100 Form | AE702 | Revision 1 |
| Cargo Basket Installation (206L) | 70201 | Revision 2 |
| Flight Manual Supplement | FMS702.90 | Revision 1 |
| | | |
| (Quick Release Basket Fabrication) | | |
| Document Control List | DCL698-1 | Revision 1 |
| AE100 Form | AE698-1 | Revision 1 |
| Cargo Basket Assembly | 69810 | Revision 2 |
| Basket Body Assembly | 69811 | Revision 2 |
| Basket Components - End Hoop | 69821 | Revision 1 |
| Basket Components - Aft Hoop | 69822 | Revision 0 |
| Instructions for Continued Airworthiness | ICA698.90 | Revision 1 |
| Document Control List | DCL698-2 | Revision 2 |
| AE100 Form | AE698-2 | Revision 1 |
| Forward Beam Fabrication | 69830 | Revision 2 |
| Aft Beam Fabrication | 69831 | Revision 2 |
| Engineering Report | ER698.04 | Revision 0 |

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Please note the request for a revision to the FAA STC after the Canadian approval is issued.

Regards,

E Burgoin, P.Eng, DAR 290M

Encl.

# FORM AE-100

| DEPARTMENT OF TRANSPORT<br>STATEMENT OF COMPLIANCE OF AIRCRAFT OR AIRCRAFT COMPONENTS WITH THE AIRWORTHINESS REQUIREMENTS | | AE-100 No.:<br>Initial Issue Date:<br><br>Revision:<br>Revision Date:<br><br>Approval No.:<br><br>Delegation No.:<br>Delegate Name:<br>Classification of Designee:<br>Employer: | AE700<br>25 May, 2006<br><br>1<br>01 November, 2007<br><br>SH00-48<br><br>290M<br>E. Burgoin<br><br>*AERO* Design Ltd. |
|---|---|---|---|
| Aircraft Mfgr: Bell<br>Aircraft Model: 407<br>Registration: All Eligible | Model Type<br>Airplane ☐<br>Helicopter ☒<br>Appliance ☐<br>Component ☐ | | |

LIST OF APPROVED REPORTS AND DATA

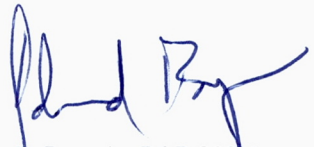
| Document Number | | Document Title | Compliance Status |
|---|---|---|---|
| DCL700<br>60620 | Revision 1<br>Revision 1 | Document Control List and all documents referred to therein<br>Block Fabrication | |
| | | DATA APPROVED BY TRANSPORT CANADA | |
| | | | |

CERTIFICATION

UNDER THE AUTHORITY VESTED IN ME BY THE DEPARTMENT OF TRANSPORT, I HEREBY CERTIFY THAT THE DATA LISTED ABOVE AND ON THE ATTACHED SHEETS NUMBERED Nil HAVE BEEN EXAMINED IN ACCORDANCE WITH ESTABLISHED PROCEDURES AND FOUND TO COMPLY, TO THE BEST OF MY KNOWLEDGE AND BELIEF WITH THE PERTINENT COMPLIANCE REQUIRMENTS.

I THEREFORE [☐] RECOMMEND FOR APPROVAL OF THESE DATA

[☒] APPROVE THESE DATA



E. Burgoin, DAR 290M

# DOCUMENT CONTROL LIST

| DOCUMENT NO. | DOCUMENT CONTENT | REVISION |
|---|---|---|
| **INSTALLATION DOCUMENTS** | | |
| 60602 | External Attachment Provisions Installation | 0 |
| FMS700.91 | Flight Manual Supplement | 0 |
| ICA700.90 | Instructions for Continued Airworthiness | 0 |
| **FABRICATION DOCUMENTS** | | |
| 60620 | Block Fabrication | 0 |
| 60621 | Forward Fitting | 1 |
| 60622 | Barrel Nut Fabrication | 0 |
| 60624 | Barrel Nut Fabrication | 0 |
| **ENGINEERING DOCUMENTS** | | |
| ER606.01 | Engineering Report | 0 |
| ER606.02 | Engineering Report | 0 |
| ER493.01 | Engineering Report | 0 |

APPROVAL:

Transport Canada / Transports Canada
AIRCRAFT CERTIFICATION DIVISION
APPROVED
By D.S. Austen
Appr'l No. SH00-48
Appr'l Date 00-12-08
Issue No. 5
Issue Date 06-06-09
YY - MM - DD

ORIGINAL DATE:
10 May, 2006
REVISION DATE:

**AERO** DESIGN LTD.
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SHEET 1 OF 1

**External Attachment Provisions Installation**

**DCL700**

Rev. **0**

# BELL 407

## ROTORCRAFT FLIGHT MANUAL SUPPLEMENT
for the
## INSTALLATION of EXTERNAL ATTACHMENT PROVISIONS

Supplemental Type Certificate No. SH00-48

Sections I, II, III and IV of this document comprise the Transport Canada Approved sections of this Flight Manual Supplement. Compliance with Section I, Limitations, is mandatory.

Section V and any subsequent sections if present are Unapproved and are provided for information only.

The information and data contained in this Flight Manual Supplement supersede or supplement that contained in the basic Approved Flight Manual for the Bell 407 when fitted with External Attachment Provisions. For limitations, procedures and performance not listed in this Flight Manual Supplement, refer to the Approved Flight Manual and other approved Flight Manual Supplements.

Transport Canada / Transports Canada
AIRCRAFT CERTIFICATION DIVISION
APPROVED
By D. S. Austen
Approval Date 06-06-09
YY - MM - DD

Revision 0
4 May, 2006

JUN 09 2006
TRANSPORT CANADA APPROVED

## I LIMITATIONS

1. Attachment of any equipment to the External Attachment Provisions requires Transport Canada Approval.

## II NORMAL PROCEDURES

1. No change from basic Approved Flight Manual.

## III EMERGENCY PROCEDURES

1. No change from basic Approved Flight Manual.

## IV PERFORMANCE

1. No change from basic Approved Flight Manual.



JUN 0 9 2006
TRANSPORT CANADA APPROVED

# INSTRUCTIONS FOR CONTINUED AIRWORTHINESS
# ICA 700.90

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## EXTERNAL ATTACHMENT PROVISIONS

## Bell 407

### Preface

These Instructions for Continued Airworthiness shall be included in the Bell 407 Maintenance Manual when the External Attachment Provisions are installed in accordance with AERO Design Ltd. Document Control List DCL700, Revision 0, or later approved revision.

The information contained herein supplements the information in the basic Maintenance Manual. For Maintenance practices and procedures not contained in these Instructions for Continued Airworthiness refer to the basic Maintenance Manual and its approved supplements.

Revision 0
Date: 20 April, 2006

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***AERO*** Design Ltd.
Engineering Consultants

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E-Mail: aerodesign@telusplanet.net

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## RECORD OF REVISIONS

| Revision Number | Issue Date | Date Inserted | By |
|---|---|---|---|
| 0 | | | Original Issue |
| | | | |
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## LIST OF EFFECTIVE PAGES

List of Revisions Revision 0 (Original Issue) 20 April, 2006

List of Effective Pages

| Description | Pages | Revision No. |
|---|---|---|
| Cover | 1 | 0 |
| Revision Record/List of Effective Pages | 2 | 0 |
| Table of Contents | 3 | 0 |
| 00-00-00 | 4-5 | 0 |
| 04-00-00 | 6 | 0 |
| 05-00-00 | 7 | 0 |
| 11-00-00 | 8 | 0 |
| 32-00-00 | 9-10 | 0 |

## TABLE OF CONTENTS

# CHAPTER 0 – INTRODUCTION

## 0-1 SCOPE

The following Instructions for Continued Airworthiness (ICA) satisfy the requirements of 14 CFR 27.1529, and provide the information necessary to complete the on-going maintenance and inspections required for the Bell 407 embodying the External Attachment Provisions as described herein.

## 0-2 DEFINITIONS AND ABBREVIATIONS

ICA - Instructions for Continued Airworthiness

LH - Left Hand

RH - Right Hand

## 0-3 DISTRIBUTION

Copies of this ICA and amendments shall be distributed to all known purchasers of the External Attachment Provisions. Requests for a copy may be made in writing to:

AERO Design Ltd.
2013 39th Avenue N.E.
Calgary, Alberta
T2E 6R7
Fax: 403-250-8333
Email: info@aerodesign.ca

Any changes will be sent to Transport Canada. All changes will be recorded in the Record of Revisions page at the front of this document.

## 0-4 COMPATIBILITY

Prior to incorporating this modification, the installer shall establish that the inter-relationship between this change and any other modification(s) incorporated will not adversely affect the airworthiness of the helicopter.

## 0-5 GENERAL DESCRIPTION

External Attachment Provisions are installed to allow the installation of various equipment, such as cargo baskets. On the Bell 407, the forward fittings are replaced, and a block is installed in the aft fittings with the attachment provisions. The new fittings and blocks incorporate a barrel nut for installing equipment.

The External Attachment Provisions are installed on the Bell 407 helicopter in accordance with Installation Drawing 60602. The forward fittings are bolted to the lower fuselage and landing gear with the same fasteners as used for the original fittings, as shown in Figure 1. In the rear, a block is installed in the cavity on the front side of the existing aft fittings, as shown in Figure 2.

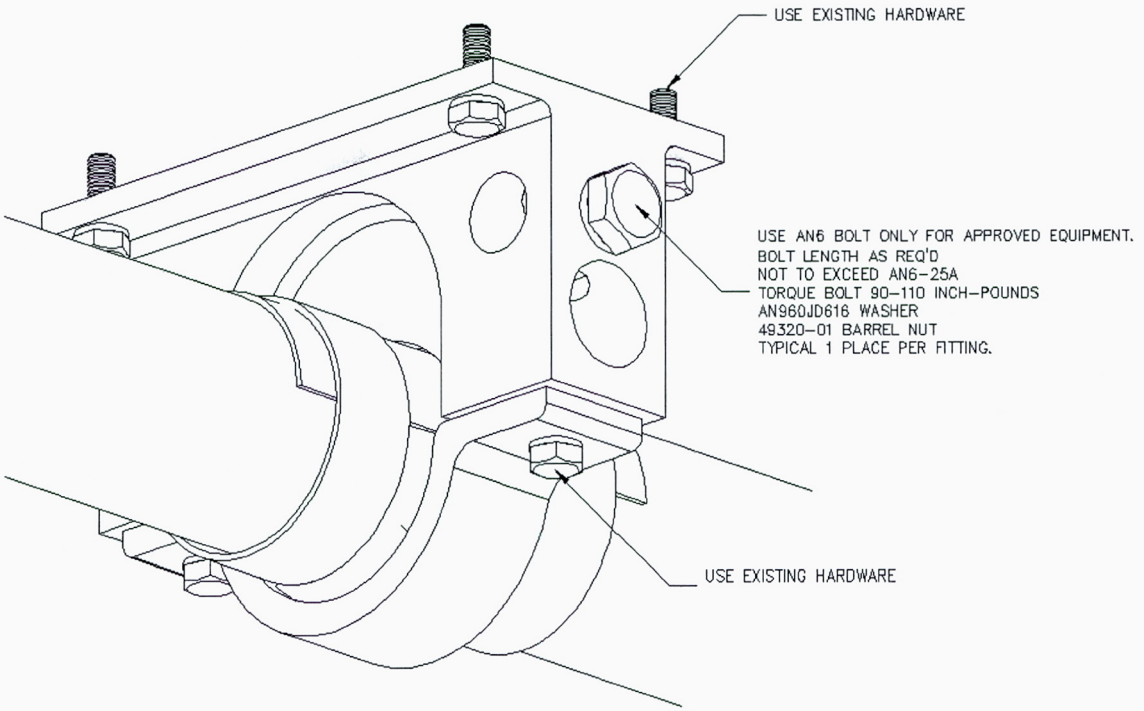



Figure 1 - Installation of Forward External Attachment Provisions

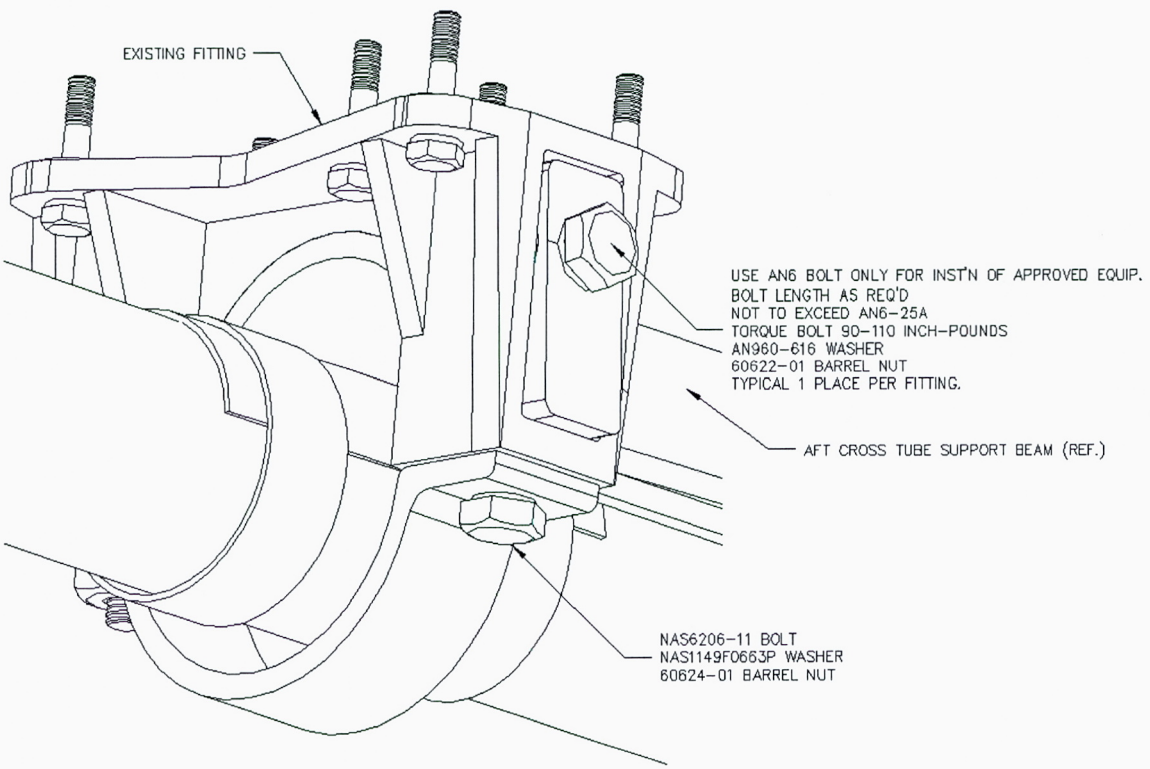



Figure 2 – Installation of Rear External Attachment Provisions

## CHAPTER 4 – AIRWORTHINESS LIMITATIONS

The Airworthiness Limitations section is Transport Canada-approved and specifies maintenance required under Section 571 of the Canadian Aviation Regulations, unless an alternative program has been approved.

No additional airworthiness limitations have been imposed due the installation of the External Attachment Provisions.

## CHAPTER 5 – INSPECTION REQUIREMENTS

### 5-1 INSPECTION SCHEDULE

Continued airworthiness is contingent upon compliance with the following inspection items. These items shall be completed in conjunction with the Bell 407 Maintenance Inspection schedule, or other approved program, or upon removal and replacement of any component of the External Attachment Provisions.

*300 Hour or Annual Inspection*

1. Inspection Area: Landing Gear Attachment Fittings

   a) Visually inspect landing gear fittings and blocks in situ for cracks, corrosion or other damage.

   b) Visually inspect hardware attaching fittings and hardware attaching cross-tubes to fitting in situ for security and damage.

*Special Inspections*

Following a hard landing inspect the External Attachment Provisions installation in accordance with the 300 hour or annual inspection listed above.

### 5-2 DAMAGE LIMITS / REPAIR INSTRUCTIONS

If damage is found in the inspections above, repair in accordance with the instructions below.

1. Landing Gear Attachment Fittings

   DO NOT REPAIR DAMAGE TO FITTINGS IF BEYOND THE LIMITS BELOW.

   a) Nicks and/or gouges on any face up to 0.030" deep and 0.125" wide may be dressed out to a smooth contour. Touch up paint as required.

   b) Do not repair elongation of provision bolt slot (AN6 bolt). Slot is nominally 0.391" (25/64") in diameter with 1/4" maximum freedom of motion left and right.

   c) Do not repair elongation of barrel nut hole. Hole is nominally 3/4" in diameter.

### 5-3 PROTECTIVE TREATMENT INFORMATION

The External Attachment Provisions are to be Alodined, primed with epoxy primer, and painted with polyurethane paint.

## CHAPTER 11 – MARKINGS AND PLACARDS

The following markings are used with the External Attachment Provisions Installation in the locations noted:

a) Located on top of forward fitting: 60621-01

b) Located on back of block: 60620-01

## CHAPTER 32 – LANDING GEAR

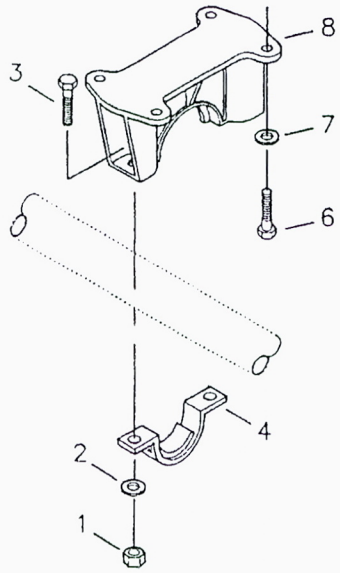
Refer to drawing 60602. Refer to Illustrated Parts Book for alternate part numbers to those that may be listed. Refer to Maintenance Manual for further information regarding installation and removal of landing gear attachments.

Raise helicopter using a jack or hoist rated at 5000 lbs or more when changing fittings. Raise helicopter until landing gear is at least 4" off the ground.

### 32-1 FORWARD LANDING GEAR FITTINGS INSTALLATION

Refer to Figure 4

1. Locate right hand forward Landing Gear Fitting (8) on bottom of helicopter and install with four Bolt (6) and Washer (7). Repeat for left side.
2. Raise front landing gear cross tube into position on the landing gear fittings.
3. Position Strap Assembly (4) under cross tube on landing gear fitting. Install two Bolt (3), Washer (2), and Nut (1).




| Item | Part | Bell 407 |
|---|---|---|
| 1 | Nut | MS21042L5 |
| 2 | Washer | NAS1149F0563P |
| 3 | Bolt | NAS6205-11 |
| 4 | Strap Assembly | 206-052-105-035 |
| --- | | |
| 6 | Bolt | NAS6604-7 |
| 7 | Washer | 140-007-16A17B4 |
| 8 | Fitting (Original) | 407-030-111-101 |
| 8 | Fitting (New) | 60621-01 |

Figure 4 – Forward Landing Gear Fitting

### 32-2 FORWARD LANDING GEAR FITTINGS REMOVAL

Refer to Figure 4

1. Remove any equipment installed on the External Attachment Provisions.
2. Remove two Bolt (3), Washer (2), Nut (1) from ends of Strap Assembly (4) and remove Strap Assembly from right hand forward Landing Gear Fitting (8). Repeat for left hand side.
3. Lower front landing gear cross tube to the ground.
4. Remove four Bolt (6) and Washer (7) from right hand forward Landing Gear Fitting (8) and remove fitting. Repeat for left hand side.

## 32-3 AFT LANDING GEAR BLOCKS INSTALLATION

Refer to figure 2.

1. Remove NAS6206-7 Bolt, NAS1149F0663P Washer, and MS21042L6 Nut.
2. Insert 60624-01 Barrel Nut in 60620-01 Block. Locate Block in forward side of right hand aft landing gear fitting.
3. Install NAS6206-11 Bolt, NAS1149F0663P Washer.
4. Repeat for left hand side.

## 32-4 AFT LANDING GEAR BLOCKS REMOVAL

Refer to Figure 2

1. Remove any equipment installed on the External Attachment Provisions.
2. On right hand aft landing gear fitting, remove NAS6206-11 Bolt, and NAS1149F0663P Washer and remove 60620-01 Block.
3. Install NAS6206-7 Bolt, NAS1149F0663P Washer, and MS21042L6 Nut to secure strap.
4. Repeat for left hand side.

## 32-5 WEIGHT AND BALANCE

| | | | Longitudinal | | Lateral | |
|---|---|---|---|---|---|---|
| Part # | Name | Weight (lbs) | Arm (in) | Moment (in-lbs) | Arm (in) | Moment (in-lbs) |
| 60621-01 | Forward Fitting (Pair) | 2.68 | 73.0 | 195.6 | 0 | 0.0 |
| 60620-01 | Block (Pair) | 0.5 | 152.7 | 76.4 | 0 | 0.0 |
| | Total | 3.18 | 85.5 | 272.0 | 0 | 0.0 |

## 32-6 STRUCTURAL FASTENER DATA

Refer to Bell Standard Practices Manual BHT-ALL-SPM for torque values not listed in this ICA.

## MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

## APPENDIX A-3 NORMAL CATEGORY ROTORCRAFT – CAR 527

### BLOCK 1

| | |
|---|---|
| **Name of the applicant for the design change approval:** | **Aero Design Ltd.** |
| **Description of the design change:** | **Installation of Quick Release Cargo Basket on Bell 407** |
| **Certification Basis of design change and revision date:** | **FAR 27, Amendment 27-30** |
| **CAR Standard A527.1(c) Program showing how changes to supplemental ICA made by the applicant or by the manufacturers of products and appliances installed in the aeroplane pursuant to the design change will be distributed:** | **Section 0-3 of Supplemental ICA (ICA 700.90)** |
| **CAR Standard 513.05 (1) (g) (iv): Installation Instructions:** | **Installation Drawing 70001** |

### BLOCK 2

Note: Enter "N/A" when no supplemental ICA are needed.

| Regulatory Standard Reference Column 1 | Design Approval Holder (DAH) ICA Reference Column 2 | Applicant Means of Compliance Supplemental ICA Requirements Column 3 |
|---|---|---|
| **A527.2 (a) Manual(s)** *(a)* The Instructions for Continued Airworthiness must be in the form of a manual or manuals as appropriate for the quantity of data to be provided. | ICA ref: Bell 407 Maintenance Manual BHT-407-MM | Supplemental ICA ref: Single Manual (ICA700.90) |
| **A527.2 (b) Practical arrangement** *(b)* The format of the manual or manuals must provide for a practical arrangement. | ICA ref: Bell 407 Maintenance Manual | Supplemental ICA ref: Arranged in ATA format |
| **A527.3** The Instructions for Continued Airworthiness must contain the following manuals or sections, as appropriate, and information: | | |
| **A527.3 (a) Rotorcraft maintenance manual or section** | | |
| **A527.3 (a) (1) (Introduction)** (1) Introduction information that includes an explanation of the rotorcraft's features and data to the extent necessary for maintenance or preventive maintenance. | ICA ref: Bell 407 Maintenance Manual, Chapter 1 | Supplemental ICA ref: Section 0-1 |
| **A527.3 (a) (2) (Description)** (2) A description of the rotorcraft and its systems and installations including its engines, rotors, and appliances. | ICA ref: Bell 407 Maintenance Manual, Chapter 1 | Supplemental ICA ref: Section 0-5 |

## MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

| Regulatory Standard Reference<br>Column 1 | Design Approval Holder (DAH)<br>ICA Reference<br>Column 2 | Applicant Means of Compliance<br>Supplemental ICA Requirements<br>Column 3 |
|---|---|---|
| **A527.3 (a) (3) Control & Operation**<br>(3) Basic control and operation information describing how the rotorcraft components and systems are controlled and how they operate, including any special procedures and limitations that apply. | ICA ref: N/A | Supplemental ICA ref: N/A |
| **A527.3 (a) (4) Servicing**<br>(4) Servicing information that covers details regarding servicing points, capacities of tanks, reservoirs, types of fluids to be used, pressures applicable to the various systems, location of access panels for inspection and servicing, locations of lubrication points, lubricants to be used, equipment required for servicing, tow instructions and limitations, mooring, jacking, and levelling information. | ICA ref: Bell 407 Maintenance Manual, Chapter 12 | Supplemental ICA ref: N/A |
| **A527.3**<br>The Instructions for Continued Airworthiness must contain the following manuals or sections, as appropriate, and information: | | |
| **A527.3 (b) Maintenance Instructions.** | | |
| **A527.3 (b) (1) Scheduling**<br>1) Scheduling information for each part of the rotorcraft and its engines, auxiliary power units, rotors, accessories, instruments, and equipment that provides the recommended periods at which they should be cleaned, inspected, adjusted, tested, and lubricated, and the degree of inspection, the applicable wear tolerances, and work recommended at these periods. However, the applicant may refer to an accessory, instrument, or equipment manufacturer as the source of this information if the applicant shows that the item has an exceptionally high degree of complexity requiring specialized maintenance techniques, test equipment, or expertise. The recommended overhaul periods and necessary cross-references to the Airworthiness Limitations section of the manual must also be included. In addition, the applicant must include an inspection program that includes the frequency and extent of the inspections necessary to provide for the continued airworthiness of the rotorcraft. | ICA ref: Bell 407 Maintenance Manual, Chapter 5 | Supplemental ICA ref: Section 5-1 |
| **A527.3 (b) (2) Troubleshooting**<br>(2) Troubleshooting information describing probable malfunctions, how to recognize those malfunctions, and the remedial action for those malfunctions. | ICA ref: N/A | Supplemental ICA ref: N/A |

## MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

| Regulatory Standard Reference<br>Column 1 | Design Approval Holder (DAH)<br>ICA Reference<br>Column 2 | Applicant Means of Compliance<br>Supplemental ICA Requirements<br>Column 3 |
|---|---|---|
| **A527.3 (b) (3) Removal/replacement**<br>(3) Information describing the order and method of removing and replacing products and parts with any necessary precautions to be taken. | ICA ref: Bell 407 Maintenance Manual, Chapter 32 | Supplemental ICA ref: Section 32-1 thru 32-4 |
| **A527.3 (b) (4) General**<br>(4) Other general procedural instructions including procedures for system testing during ground running, symmetry checks, weighing and determining the center of gravity, lifting and shoring, and storage limitations. | ICA ref: Bell 407 Maintenance Manual, Chapter 7 and 8 | Supplemental ICA ref: Section 32-5 |
| **A527.3 (c) Access**<br>*(c)* Diagrams of structural access plates and information needed to gain access for inspections when access plates are not provided. | ICA ref: N/A | Supplemental ICA ref: N/A |
| **A527.3 (d) Special inspections**<br>*(d)* Details for the application of special inspection techniques including radiographic and ultrasonic testing where such processes are specified. | ICA ref: Bell 407 Maintenance Manual, Chapter 5 | Supplemental ICA ref: Section 5-1 |
| **A527.3 (e) Protective treatment**<br>*(e)* Information needed to apply protective treatments to the structure after inspection. | ICA ref: Bell Standard Practices Manual BHT-ALL-SPM, Chapter 3 | Supplemental ICA ref: Section 5-3 |
| **A527.3 (f) Fasteners, torque values, etc**<br>*(f)* All data relative to structural fasteners such as identification, discard recommendations, and torque values. | ICA ref: Bell Standard Practices Manual BHT-ALL-SPM, Chapter 2 | Supplemental ICA ref: Section 32-6 |
| **A527.3 (g) Special tools**<br>*(g)* A list of special tools needed. | ICA ref: N/A | Supplemental ICA ref: N/A |

**BLOCK 3**

Note: The statement in block 5 does not constitute an approval of the Airworthiness Limitations Section. Airworthiness Limitations differ from other maintenance tasks, in that they are mandatory, as a direct condition of the approval of the type design. They are therefore referenced directly in the approval document itself. However, they must also be included in the Supplemental Instructions for Continued Airworthiness.

| | | |
|---|---|---|
| **A527.4 AWL - Separate Section 1**<br>The Instructions for Continued Airworthiness must contain a section titled Airworthiness Limitations that is segregated and clearly distinguishable from the rest of the document. This section must set forth each mandatory replacement time, structural inspection interval, and related structural inspection procedure approved under 527.571. If the Instructions for Continued Airworthiness consist of multiple documents, the section required by this paragraph must be included in the principal manual. This section must contain a legible statement in a prominent location that reads: "The Airworthiness Limitations section is approved by the Minister and specifies maintenance required by any applicable airworthiness or operating rule unless an alternative program has been approved by the Minister." | ICA ref: Bell 407 Maintenance Manual, Chapter 4 | Supplemental ICA ref: Chapter 4 |

**BLOCK 4 – Applicant Statement of Compliance**

**The Supplemental ICA referenced above comprises the complete listing of supplemental ICA necessary to show compliance with the regulatory standard that supports this change in type design.**

**Applicants Signature:** _____ **Date:** 5 MAY 2006

**Applicants Name:** E. Burgoin, P.Eng, DAR 290M

**BLOCK 5 – Minister's Statement of Acceptability**

**The design change is adequately supported by existing ICA and/or supplemental ICA, as identified above and is acceptable to the Minister.**

**Reviewer's Name:** _____ **Phone #** _____ **Email:** _____ **Mail Routing Symbol:** _____

**Signature:** _____ **Date:** _____ **NAPA Number** _____

# FORM AE-100

| DEPARTMENT OF TRANSPORT<br>STATEMENT OF COMPLIANCE OF AIRCRAFT OR AIRCRAFT COMPONENTS WITH THE AIRWORTHINESS REQUIREMENTS | | AE-100 No.:<br>Initial Issue Date:<br><br>Revision:<br>Revision Date:<br><br>Approval No.:<br><br>Delegation No.:<br>Delegate Name:<br>Classification of Designee:<br>Employer: | AE700<br>25 May, 2006<br><br>0<br><br><br>SH00-48<br><br>290M<br>E. Burgoin<br><br>*AERO* Design Ltd. |
|---|---|---|---|
| Aircraft Mfgr: Bell<br>Aircraft Model: 407<br>Registration: All Eligible | Model Type<br>Airplane ☐<br>Helicopter ☒<br>Appliance ☐<br>Component ☐ | | |

LIST OF APPROVED REPORTS AND DATA

| Document Number | | Document Title | Compliance Status |
|---|---|---|---|
| DCL700 | Revision 0 | Document Control List and all documents referred to therein | |
| | | DATA APPROVED BY TRANSPORT CANADA | |
| FMS700.91<br>ICA700.90 | Revision 0<br>Revision 0 | Flight Manual Supplement<br>Instructions for Continued Airworthiness | |

CERTIFICATION

UNDER THE AUTHORITY VESTED IN ME BY THE DEPARTMENT OF TRANSPORT, I HEREBY CERTIFY THAT THE DATA LISTED ABOVE AND ON THE ATTACHED SHEETS NUMBERED Nil HAVE BEEN EXAMINED IN ACCORDANCE WITH ESTABLISHED PROCEDURES AND FOUND TO COMPLY, TO THE BEST OF MY KNOWLEDGE AND BELIEF WITH THE PERTINENT COMPLIANCE REQUIRMENTS.

I THEREFORE [☐] RECOMMEND FOR APPROVAL OF THESE DATA

[☒] APPROVE THESE DATA

E. Burgoin, DAR 290M

# DOCUMENT CONTROL LIST

| DOCUMENT NO. | DOCUMENT CONTENT | REVISION |
|---|---|---|
| **INSTALLATION DOCUMENTS** | | |
| 60602 | External Attachment Provisions Installation | 0 |
| FMS700.91 | Flight Manual Supplement | 0 |
| ICA700.90 | Instructions for Continued Airworthiness | 0 |
| **FABRICATION DOCUMENTS** | | |
| 60620 | Block Fabrication | 0 |
| 60621 | Forward Fitting | 1 |
| 60622 | Barrel Nut Fabrication | 0 |
| 60624 | Barrel Nut Fabrication | 0 |
| **ENGINEERING DOCUMENTS** | | |
| ER606.01 | Engineering Report | 0 |
| ER606.02 | Engineering Report | 0 |
| ER493.01 | Engineering Report | 0 |

APPROVAL:

ORIGINAL DATE:

10 May, 2006

REVISION DATE:

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SHEET 1 OF 1

**External Attachment Provisions Installation**

# DCL700

Rev. 0

# INSTRUCTIONS FOR CONTINUED AIRWORTHINESS
# ICA 700.90

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## EXTERNAL ATTACHMENT PROVISIONS

## Bell 407

### Preface

These Instructions for Continued Airworthiness shall be included in the Bell 407 Maintenance Manual when the External Attachment Provisions are installed in accordance with AERO Design Ltd. Document Control List DCL700, Revision 0, or later approved revision.

The information contained herein supplements the information in the basic Maintenance Manual. For Maintenance practices and procedures not contained in these Instructions for Continued Airworthiness refer to the basic Maintenance Manual and its approved supplements.

Revision 0
Date: 20 April, 2006

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***AERO*** Design Ltd.
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## RECORD OF REVISIONS

| Revision Number | Issue Date | Date Inserted | By |
|---|---|---|---|
| 0 | | | Original Issue |
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## LIST OF EFFECTIVE PAGES

List of Revisions Revision 0 (Original Issue) 20 April, 2006

List of Effective Pages

| Description | Pages | Revision No. |
|---|---|---|
| Cover | 1 | 0 |
| Revision Record/List of Effective Pages | 2 | 0 |
| Table of Contents | 3 | 0 |
| 00-00-00 | 4-5 | 0 |
| 04-00-00 | 6 | 0 |
| 05-00-00 | 7 | 0 |
| 11-00-00 | 8 | 0 |
| 32-00-00 | 9-10 | 0 |

## TABLE OF CONTENTS

# CHAPTER 0 – INTRODUCTION

## 0-1 SCOPE

The following Instructions for Continued Airworthiness (ICA) satisfy the requirements of 14 CFR 27.1529, and provide the information necessary to complete the on-going maintenance and inspections required for the Bell 407 embodying the External Attachment Provisions as described herein.

## 0-2 DEFINITIONS AND ABBREVIATIONS

ICA - Instructions for Continued Airworthiness

LH - Left Hand

RH - Right Hand

## 0-3 DISTRIBUTION

Copies of this ICA and amendments shall be distributed to all known purchasers of the External Attachment Provisions. Requests for a copy may be made in writing to:

AERO Design Ltd.
2013 39th Avenue N.E.
Calgary, Alberta
T2E 6R7
Fax: 403-250-8333
Email: info@aerodesign.ca

Any changes will be sent to Transport Canada. All changes will be recorded in the Record of Revisions page at the front of this document.

## 0-4 COMPATIBILITY

Prior to incorporating this modification, the installer shall establish that the inter-relationship between this change and any other modification(s) incorporated will not adversely affect the airworthiness of the helicopter.

## 0-5 GENERAL DESCRIPTION

External Attachment Provisions are installed to allow the installation of various equipment, such as cargo baskets. On the Bell 407, the forward fittings are replaced, and a block is installed in the aft fittings with the attachment provisions. The new fittings and blocks incorporate a barrel nut for installing equipment.

The External Attachment Provisions are installed on the Bell 407 helicopter in accordance with Installation Drawing 60602. The forward fittings are bolted to the lower fuselage and landing gear with the same fasteners as used for the original fittings, as shown in Figure 1. In the rear, a block is installed in the cavity on the front side of the existing aft fittings, as shown in Figure 2.

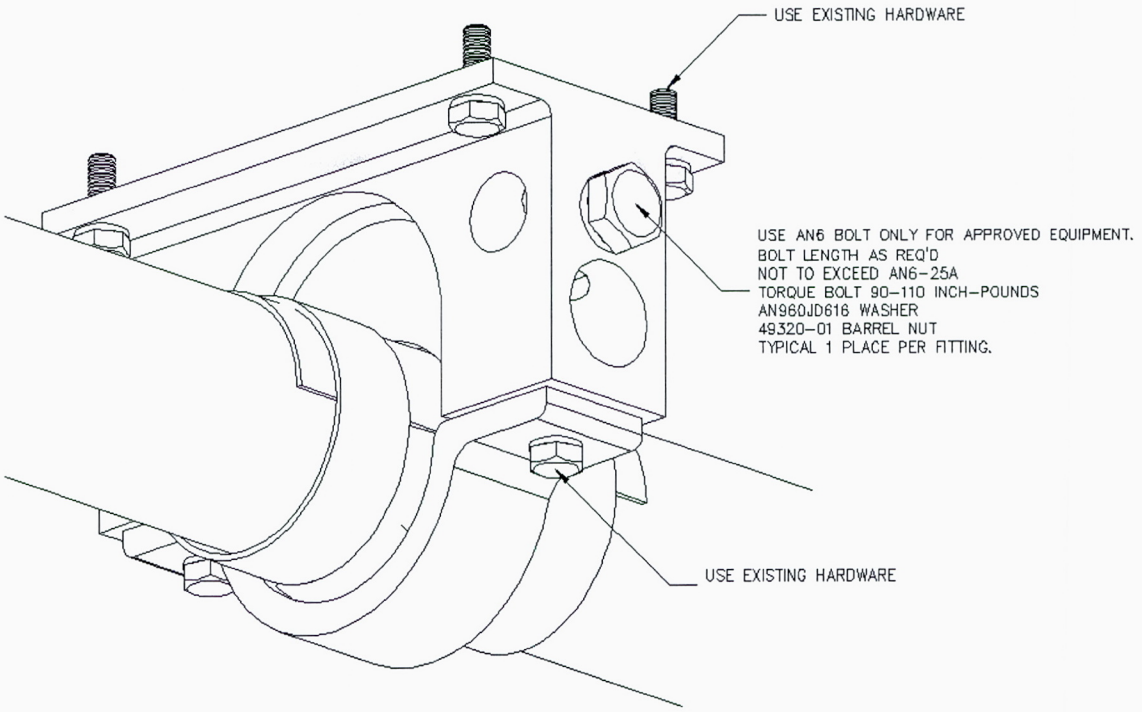



Figure 1 - Installation of Forward External Attachment Provisions

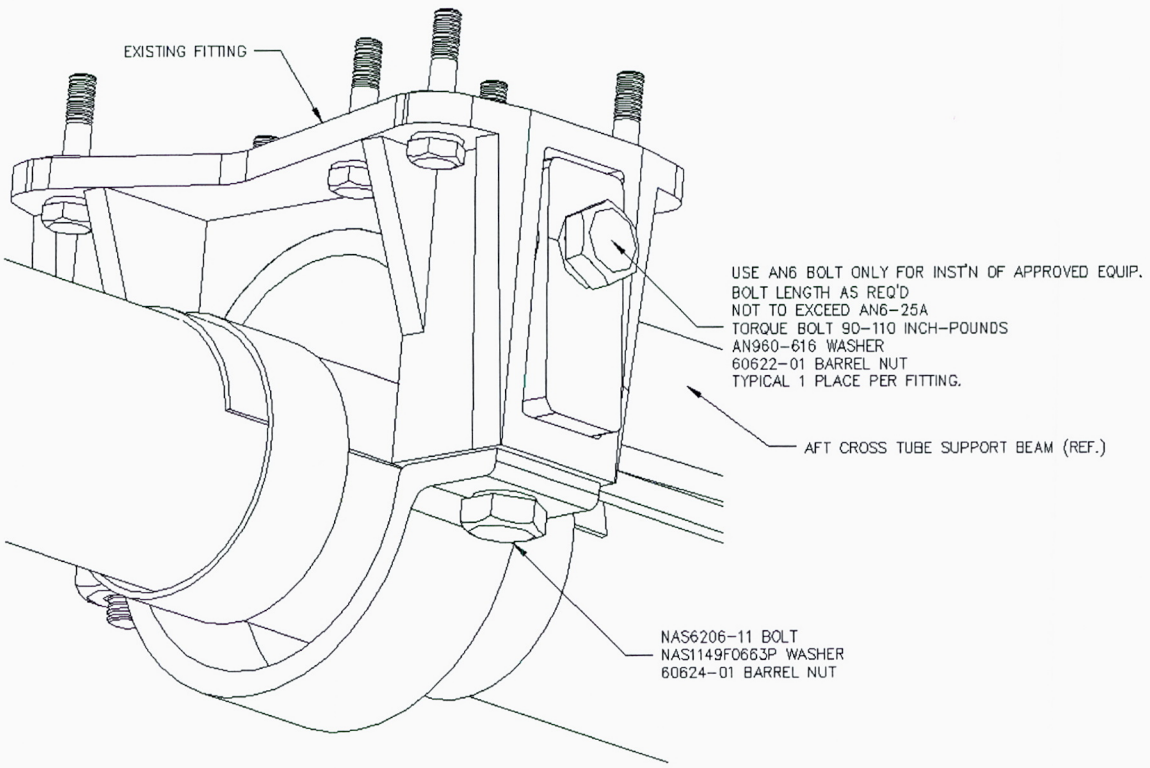



Figure 2 – Installation of Rear External Attachment Provisions

## CHAPTER 4 – AIRWORTHINESS LIMITATIONS

The Airworthiness Limitations section is Transport Canada-approved and specifies maintenance required under Section 571 of the Canadian Aviation Regulations, unless an alternative program has been approved.

No additional airworthiness limitations have been imposed due the installation of the External Attachment Provisions.

## CHAPTER 5 – INSPECTION REQUIREMENTS

### 5-1 INSPECTION SCHEDULE

Continued airworthiness is contingent upon compliance with the following inspection items. These items shall be completed in conjunction with the Bell 407 Maintenance Inspection schedule, or other approved program, or upon removal and replacement of any component of the External Attachment Provisions.

*300 Hour or Annual Inspection*

1. Inspection Area: Landing Gear Attachment Fittings

   a) Visually inspect landing gear fittings and blocks in situ for cracks, corrosion or other damage.

   b) Visually inspect hardware attaching fittings and hardware attaching cross-tubes to fitting in situ for security and damage.

*Special Inspections*

Following a hard landing inspect the External Attachment Provisions installation in accordance with the 300 hour or annual inspection listed above.

### 5-2 DAMAGE LIMITS / REPAIR INSTRUCTIONS

If damage is found in the inspections above, repair in accordance with the instructions below.

1. Landing Gear Attachment Fittings

   DO NOT REPAIR DAMAGE TO FITTINGS IF BEYOND THE LIMITS BELOW.

   a) Nicks and/or gouges on any face up to 0.030" deep and 0.125" wide may be dressed out to a smooth contour. Touch up paint as required.

   b) Do not repair elongation of provision bolt slot (AN6 bolt). Slot is nominally 0.391" (25/64") in diameter with 1/4" maximum freedom of motion left and right.

   c) Do not repair elongation of barrel nut hole. Hole is nominally 3/4" in diameter.

### 5-3 PROTECTIVE TREATMENT INFORMATION

The External Attachment Provisions are to be Alodined, primed with epoxy primer, and painted with polyurethane paint.

## CHAPTER 11 – MARKINGS AND PLACARDS

The following markings are used with the External Attachment Provisions Installation in the locations noted:

a) Located on top of forward fitting: 60621-01

b) Located on back of block: 60620-01

## CHAPTER 32 – LANDING GEAR

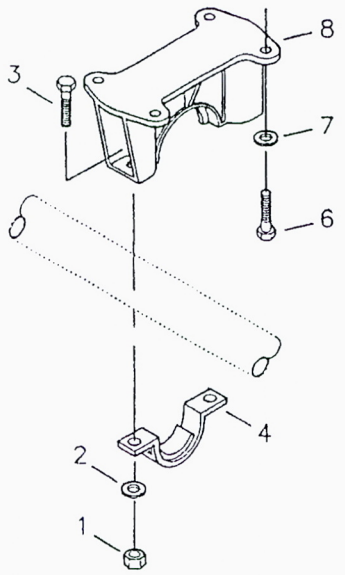
Refer to drawing 60602. Refer to Illustrated Parts Book for alternate part numbers to those that may be listed. Refer to Maintenance Manual for further information regarding installation and removal of landing gear attachments.

Raise helicopter using a jack or hoist rated at 5000 lbs or more when changing fittings. Raise helicopter until landing gear is at least 4" off the ground.

### 32-1 FORWARD LANDING GEAR FITTINGS INSTALLATION

Refer to Figure 4

1. Locate right hand forward Landing Gear Fitting (8) on bottom of helicopter and install with four Bolt (6) and Washer (7). Repeat for left side.
2. Raise front landing gear cross tube into position on the landing gear fittings.
3. Position Strap Assembly (4) under cross tube on landing gear fitting. Install two Bolt (3), Washer (2), and Nut (1).




| Item | Part | Bell 407 |
|---|---|---|
| 1 | Nut | MS21042L5 |
| 2 | Washer | NAS1149F0563P |
| 3 | Bolt | NAS6205-11 |
| 4 | Strap Assembly | 206-052-105-035 |
| --- | | |
| 6 | Bolt | NAS6604-7 |
| 7 | Washer | 140-007-16A17B4 |
| 8 | Fitting (Original) | 407-030-111-101 |
| 8 | Fitting (New) | 60621-01 |

Figure 4 – Forward Landing Gear Fitting

### 32-2 FORWARD LANDING GEAR FITTINGS REMOVAL

Refer to Figure 4

1. Remove any equipment installed on the External Attachment Provisions.
2. Remove two Bolt (3), Washer (2), Nut (1) from ends of Strap Assembly (4) and remove Strap Assembly from right hand forward Landing Gear Fitting (8). Repeat for left hand side.
3. Lower front landing gear cross tube to the ground.
4. Remove four Bolt (6) and Washer (7) from right hand forward Landing Gear Fitting (8) and remove fitting. Repeat for left hand side.

## 32-3 AFT LANDING GEAR BLOCKS INSTALLATION

Refer to figure 2.

1. Remove NAS6206-7 Bolt, NAS1149F0663P Washer, and MS21042L6 Nut.
2. Insert 60624-01 Barrel Nut in 60620-01 Block. Locate Block in forward side of right hand aft landing gear fitting.
3. Install NAS6206-11 Bolt, NAS1149F0663P Washer.
4. Repeat for left hand side.

## 32-4 AFT LANDING GEAR BLOCKS REMOVAL

Refer to Figure 2

1. Remove any equipment installed on the External Attachment Provisions.
2. On right hand aft landing gear fitting, remove NAS6206-11 Bolt, and NAS1149F0663P Washer and remove 60620-01 Block.
3. Install NAS6206-7 Bolt, NAS1149F0663P Washer, and MS21042L6 Nut to secure strap.
4. Repeat for left hand side.

## 32-5 WEIGHT AND BALANCE

| | | | Longitudinal | | Lateral | |
|---|---|---|---|---|---|---|
| Part # | Name | Weight (lbs) | Arm (in) | Moment (in-lbs) | Arm (in) | Moment (in-lbs) |
| 60621-01 | Forward Fitting (Pair) | 2.68 | 73.0 | 195.6 | 0 | 0.0 |
| 60620-01 | Block (Pair) | 0.5 | 152.7 | 76.4 | 0 | 0.0 |
| | Total | 3.18 | 85.5 | 272.0 | 0 | 0.0 |

## 32-6 STRUCTURAL FASTENER DATA

Refer to Bell Standard Practices Manual BHT-ALL-SPM for torque values not listed in this ICA.

# BELL 407

## ROTORCRAFT FLIGHT MANUAL SUPPLEMENT
for the
## INSTALLATION of EXTERNAL ATTACHMENT PROVISIONS

Supplemental Type Certificate No. SH00-48

Sections I, II, III and IV of this document comprise the Transport Canada Approved sections of this Flight Manual Supplement. Compliance with Section I, Limitations, is mandatory.

Section V and any subsequent sections if present are Unapproved and are provided for information only.

The information and data contained in this Flight Manual Supplement supersede or supplement that contained in the basic Approved Flight Manual for the Bell 407 when fitted with External Attachment Provisions. For limitations, procedures and performance not listed in this Flight Manual Supplement, refer to the Approved Flight Manual and other approved Flight Manual Supplements.

Revision 0
4 May, 2006

TRANSPORT CANADA APPROVED

## I LIMITATIONS

1. Attachment of any equipment to the External Attachment Provisions requires Transport Canada Approval.

## II NORMAL PROCEDURES

1. No change from basic Approved Flight Manual.

## III EMERGENCY PROCEDURES

1. No change from basic Approved Flight Manual.

## IV PERFORMANCE

1. No change from basic Approved Flight Manual.